

Designing Surveys

The key to obtaining good data through a survey is to develop a good survey questionnaire. Whether you are conducting interviews or mailing out surveys, you will need to know how to design a good survey questionnaire.

What is a survey questionnaire?

Survey questionnaires present a set of questions to a subject who with his/her responses will provide data to a researcher. On the surface, it seems a fairly simple task to write up a set of questions to collect information, but there are many pitfalls that should be avoided to develop a good survey questionnaire. We will focus here on describing some of the key elements in designing a survey questionnaire, and then highlighting some tips and tricks to for creating a good survey questionnaire.

Objectives

The key to developing a good survey questionnaire is to keep it short while ensuring that you capture all of the information that you need. This is not an easy task. Before you even begin to design your survey questionnaire, you should develop a set of objectives for your research and list out the information that you are trying to capture. This list of objectives and research goals will serve as your plan for the survey questionnaire.

Now that you know what you are looking for, you can begin to structure the questions that will help you capture the information. Once you have developed your survey questionnaire, you can use your objectives to go back through the questions and determine if each of the questions is providing you with information that you need. Any question that is not providing necessary information should be removed.

Types of Questions:

There are two different types of questions that can be used to collect information. The first is called a structured or fixed response question and the second is called non-structured or open question. It is important to understand when and how to use these questions when designing your survey.

Structured (fixed response)

Structured questions are questions that offer the respondent a closed set of responses from which to choose. Structured questions make data collection and analysis much simpler and they take less time to answer. Structured questions are best suited in the following situations: (1) when you have a thorough understanding of the responses so that you can appropriately develop the answer choices (2) when you are *not* trying to capture new ideas or thoughts from the respondent.

Examples of Structured Questions

Do you have a driver's license? () Yes	Which subject do you enjoy the most at school? () Math	How many hours a day do you spend doing homework? () 0 to 1 hour
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<input type="checkbox"/> No	<input type="checkbox"/> Science <input type="checkbox"/> English <input type="checkbox"/> Foreign Language <input type="checkbox"/> History <input type="checkbox"/> Government <input type="checkbox"/> Art / Music <input type="checkbox"/> Other	<input type="checkbox"/> 2 to 3 hours <input type="checkbox"/> 4 to 5 hours <input type="checkbox"/> more than 5 hours
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When writing the selection of responses for a structured question, you should make certain that the list covers *all possible alternatives* that the respondent might select AND that *each of the answers is unique* (ie they do not overlap). So for example, in the homework question above, we have included every option on the number of hours (from 0 to infinity). Also, you will notice that we were careful not to overlap the hours when defining the ranges by stating them as "0 to 1 hour" and "2 to 3 hours" rather than saying "0 to 1 hour" and "1 to 2 hours".

Sometimes, including general catch all responses (such as "Other", "Don't know", "None of the above", etc...) at the end of a list of answer choices will help to ensure that the data you are collecting will be accurate. In the school subject example above, you will notice that the last answer choice is "Other". Since the selection of non-required courses varies dramatically from school to school the option of "Other" helps to ensure that you are capturing the responses that do not fit into the broader subject areas already listed, rather than forcing respondents to select one of the other subject areas. Similarly, adding "Don't know" to a response list for a question that some of the respondents may not be capable of answering will help ensure you are collecting valid data. In general however, you want to use the "Don't know" option sparingly. You should try to ensure that your respondents are capable of answering the majority of the questions on your survey questionnaire.

You should also make sure that all of the answers are *relevant* to the question. Irrelevant responses may distract the respondent in addition to adding unnecessary length to your survey questionnaire. Consider the following change to the favorite school subject question.

Example of a Bad Question With an *Irrelevant* Answer Choice

Which subject do you enjoy the most at school?

☐ Math
☐ Science
☐ English
☐ Foreign Language
☐ History
☐ Government
☐ Art / Music
☐ Football Practice
☐ Other

Example of a Bad Question with *Inconsistent* Answer Choices

How many hours a day do you spend doing homework?

☐ 0 to 1 hour
☐ 120 to 180 minutes
☐ 4 to 5 hours
☐ more than 5 hours

Example of a *Rating* Question

Please describe how you felt about the Homecoming Pep Rally.

Unsatisfied Somewhat Satisfied Satisfied Very Satisfied Extremely Satisfied
 (1) (2) (3) (4) (5)

Example of a *Ranking* Question

Please rank the following Homecoming activities in order of preference (starting with 1 for your favorite activity).

- ___ Homecoming Pep Rally
- ___ Homecoming Parade
- ___ Homecoming Football Game
- ___ Homecoming Dance

WHICH ONE IS MORE USEFUL? Rating or ranking?

2. Non-structured (open-ended)

Non-structured questions, or open-ended questions, are questions where there is no list of answer choices from which to choose. Respondents are simply asked to write their response to a question.

It is best to use non-structured questions when you are exploring new ideas and you don't really know what to expect from the respondents. In some situations, you may have a partial list of answer choices, but you may still have some doubt or uncertainty about other possible responses. You can create a partially structured question such as the following:

Example of a Partially Structured Question

Why did you sign up for the Science Buddies Classroom Scientists Program (please select all that apply)?

- ☐ I really enjoy science
- ☐ My teacher asked me to sign up
- ☐ My teacher made me sign up
- ☐ My parents asked me to sign up
- ☐ I'm bored in science class & thought this would be fun
- ☐ I thought it would help me do a better project
- ☐ I thought it would help me win the Science Fair
- ☐ I thought having a Mentor to talk to would be fun
- ☐ I knew other students who were doing it
- ☐ Other _____

Ask only one question at a time (the double barreled question)

Bad Question: Double-barreled Question	Good Question
How have teachers and students at your school responded to the new 45-minute lunch period? <input type="checkbox"/> Satisfied <input type="checkbox"/> Unsatisfied	How have <u>teachers</u> at your school reacted to the new 45-minute lunch period? <input type="checkbox"/> Satisfied <input type="checkbox"/> Unsatisfied How have <u>students</u> at your school reacted to the new 45-minute lunch period? <input type="checkbox"/> Satisfied <input type="checkbox"/> Unsatisfied

Example of a Leading Question and How to Correct it

Bad Question: Leading	Good Question: Neutral
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<p>Do you think that the new cafeteria lunch menu offers a better variety of healthy foods than the old one?</p> <p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p><input type="radio"/> No Opinion</p>	<p>How do you feel about the new cafeteria lunch menu compared to the old one?</p> <p><input type="radio"/> The new menu offers a better variety of healthy foods</p> <p><input type="radio"/> The old menu offers a better variety of healthy foods</p> <p><input type="radio"/> The selections are similar</p> <p><input type="radio"/> No opinion</p>
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Ask questions that can be answered by your subjects

Make sure that the questions you are asking are questions that people will be able to answer. The most common mistake is to ask questions that most people simply cannot remember. Here is an example:

How much did you spend on school supplies last year?

- ☐ \$0 - \$10
- ☐ \$11 - \$20
- ☐ \$21 - \$30
- ☐ over \$30

While this question appears to be perfectly acceptable, it is unlikely that many students will really remember how much they spent on school supplies. Most responses will probably be guesses rather than actual numbers, and many respondents may become frustrated trying to calculate in their heads how much they spent. If a guess is all that you are looking for, then simply rephrasing the question to the following will make it much easier for the respondent.

How much do you estimate you spent on school supplies in the last year?

- ☐ \$0 - \$10
- ☐ \$11 - \$20
- ☐ \$21 - \$30
- ☐ over \$30